

PROCEEDINGS OF THE ROYAL ENTOMOLOGICAL SOCIETY OF LONDON

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ORDINARY MEETING

WEDNESDAY, 4th NOVEMBER, 1959, at 5.30 p.m. (Tea 5 p.m.)

AGENDA

1. Confirmation of the Proceedings of the Ordinary Meeting held on 7th October, 1959.
2. Recommendations of candidates for Fellowship. First reading.
3. Recommendations of candidates for Fellowship. Second reading.
4. Announcement of election of new Fellows.
5. Additions to the Library [see p. 28].
6. Admission of Fellows.
7. Exhibits.
8. Communications.

Dr. H. B. D. Kettlewell

Insect Adaptations in Brazil

A film with sound track made by Dr. Kettlewell during his visit to Brazil in connection with the Darwin Centenary.

The film will be introduced by Dr. Kettlewell, who will give a short talk illustrated by coloured slides.

NOTICES

The next meeting will be held on *Wednesday, 2nd December, 1959.*

Four short papers will be given by : **Mr. J. C. Ene**, **Professor G. C. Varley**, **Dr. J. S. Kennedy** and **Mr. W. Victor Harris.**

PROCEEDINGS OF THE ORDINARY MEETING HELD ON 7TH OCTOBER, 1959

Dr. B. P. UVAROV, C.M.G., F.R.S., President, in the Chair

Present, 78 Fellows and 15 Visitors.

The minutes of the Ordinary Meeting held on 1st July were confirmed and signed by the President, subject to the substitution of "bark beetles" for "water beetles" on page 23, line 33, in the statement by Miss Jackson regarding the regeneration of flight muscles.

The names of the following candidates for election were read for the first time: Mr. Peter Fleming Aitken, B.Sc.; Mr. Mohammad Ameeruddin; Dr. Shahid Husain Ashrafi; Mr. Peter Rowland Bailey, B.Sc.; Mr. Ralph Chamberlain; Mr. Donald Ivan Chapman; Mr. Alexander Davidson; Mr. John C. Ene, B.Sc.; Dr. Henry John Egglshaw; Mr. John Forsyth, B.Sc.; Mr. Lameck Kazembe Haza Goma, M.A., B.Sc.; Mr. William John Walter Hines, M.Sc.; Mr. Lance Southward Kelly; Miss Daphne Linscott; Mr. David Kendray McAlpine; Mr. Michael Edward Marchant; Mr. Sayed Tawqir ul Hasan Naqvi; Mr. P. K. Rajagopalan, M.Sc.; Mr. A. V. Sadanand; Mrs. Joan Marjorie Sherratt; Mr. Donald Henry Smith; Mr. Timothy Ajibola Taylor; and Mr. Douglas Harvey Welch.

For the second time (taken as read): Mr. Narinder Perakash Chopra, M.Sc.; Mr. Bruce J. Evans; Mr. John McCallum Deighton; Mr. John Weston Mills; Mr. Amirapu Perraju; Mr. George Buckham Reilly; Mr. Milton William Shaw, M.Sc.; Mr. Robert William Taylor, B.Sc.; and Mr. Edward Farrington Woods.

The Secretary read the names of the following newly elected Fellows of the Society: Mr. Lalit Narayan Lal, M.Sc., Magadh Mahila College, Patna, India; Dr. Niyazi Lodos, Faculty of Agriculture, Aegean University, Izmir, Turkey; Mr. A. S. McClymont, West of Scotland Agricultural College, 202 Devonside Road, Carmichael, Biggar, Lanarkshire; Dr. Sebastião J. de Oliveira, Instituto Oswaldo Cruz, Caixa Postal 926, Rio de Janeiro, Brazil; Mr. Ghulam Sarwar Salim, 8 Belvedere Road, Liverpool, 8; and Mrs. Navamany Selvarajah, Royal Holloway College, Englefield Green, Surrey.

Thanks were voted to donors of gifts to the Library since the last meeting.

Mr. P. S. Tyler and Mr. H. Diek Brown signed the Obligation Book and were admitted Fellows of the Society.

The Hon. Miriam Rothschild and **Dr. J. F. D. Frazer** exhibited freeze-dried moths stored in glass ampoules. The technique by which these were prepared was described. The moths were killed by being deep-frozen at -7° to -10° C. Any necessary dissections were done on a thin layer of solid CO_2 . The moths were then placed in Pyrex glass tubes which were evacuated at a pressure of 0.1 mm. Hg at $+3^{\circ}$ C. over phosphorus pentoxide, which was renewed as necessary. When desiccation was complete (usually after 6–12 hours) the tubes were sealed under vacuum, while the contents were kept at -20° C. or lower by surrounding the end of the tube with powdered solid CO_2 . Although the tubes can probably be safely stored at room temperature, it is considered better to keep them in a deep freeze at about -10° C. when the contents are intended for pharmacological studies.

Dr. K. Mellanby commented that in many cases reactions to insects might be produced by extracts from dead, dried specimens. This was true of some kinds of mosquitoes, where an extract from a museum specimen might give a skin reaction similar to a normal bite. The substances now described, which were so very unstable, must be very different. Dr. Frazer agreed that they were different.

Mr. M. J. Way exhibited part of an autumn population of *Aphis fabae* Scopoli on spindle, showing how competition between individual aphids is apparently limiting the increase in numbers of the species.

Dr. A. J. Haddow gave a paper on the behaviour of bloodsucking Diptera in and above the tropical rain forest, an abstract of which appeared on pages 21-22.

In the discussion which followed, Dr. T. R. E. Southwood enquired whether biting occurring just after dusk and just before dawn in the top half of the canopy could be associated with wind speed. Dr. Haddow replied that more work with wind speed readings would be required to establish this, but the evidence suggested that it might well be so.

Mr. L. P. Lefkovitch observed that sharp changes in humidity often occurred at sunrise and sunset and might be greatest at the top of the canopy. It was possible that these changes in the amount of moisture might stimulate biting activity. Dr. Haddow said that again more information was needed, but the change in humidity at sunset was more striking than at dawn. The work on which the late Dr. W. S. Snow was engaged might have thrown some light on this and it was hoped that the data he had collected would be made available.

Mr. J. P. Boorman asked whether any information was available on the effect of different wavelengths of light. His own work in Lagos had shown M.V. lamps to be less attractive than ordinary tungsten lamps. Dr. Haddow replied that experiments which were just starting showed the opposite to be true in his work. No work had been done on CO₂ changes.

Mr. P. F. Mattingly observed that laboratory work suggested that CO₂ did activate mosquitoes, *e.g.* breathing into a cage provided simple evidence of this.

Professor O. W. Richards enquired whether suction traps would not be better for flight activity work, to which Dr. Haddow replied that the use of unbaited and unlighted traps was being investigated.

He continued, in reply to an enquiry by Dr. D. J. Lewis, that Phlebotominae had been taken in traps. Dr. Lewis having also asked whether there was any evidence of different biting cycles in nulliparous and parous females, Dr. Haddow replied that some progress had been made in the study of parous females. No differential biting cycles had been observed in mosquitoes, but older females tended to be more numerous in the higher traps.

Dr. Mellanby observed that in the tropical rain forest, where the air is so still, special precautions would be needed when using large, powerful suction traps. In particular the gale of wind coming out of the exhaust of some fans might upset the conditions below the fan over quite a large area. He also added, referring to Mr. Mattingly's remarks, that not all insects were affected by CO₂. Some reacted to human smells, and blowing into a cage might introduce other exciting substances than CO₂. Mr. Mattingly added that there was experimental evidence suggesting that pure CO₂ did stimulate activity.

Dr. Haddow explained that attempts were being made to bring into use a trap, designed by Dr. W. H. R. Lumsden, which would be non-directional and avoid too much disturbance of the surrounding atmosphere.

Mr. G. Surtees commented on the change in biting behaviour which could occur in a very small area, and mentioned his experiments in Nigeria with *Aedes aegypti*, in which breeding behaviour also varied over a small area.

Mr. G. A. H. McClelland said there did appear to be differences in behaviour between populations "in and around a house" and in the "open". These differences did not seem to be related to any difference in hourly distribution. The more exophilic form was also found in houses to some extent, but it did not then show the "outside" behaviour pattern.

Dr. J. L. Cloudsley-Thompson asked whether any work had been done with cultures under constant conditions, to which Dr. Haddow replied that some work had been done on oviposition cycles.

PAUL FREEMAN, *Honorary Secretary.*

ADDITIONS TO THE LIBRARY

Presented

- [Blagoveshchenskii, D. I. *Insecta Neuroptera*. T.1, no. 1 *Mallophaga*.] 8vo. Moscow & Leningrad, 1959. [*Fauna SSSR* 72.] [Academy of Sciences of the U.S.S.R. By Exchange.]
- Bonhag, P. F. Histological and histochemical studies on the ovary of the American cockroach *Periplaneta americana* (L.). *Univ. Calif. Publ. Ent.* 16 : 81-124, 1959. [The Publishers.]
- British Museum (Natural History). *The Culicine mosquitoes of the Indo-Malayan area*. Pt. IV. *Genus Aedes Meigen, subgenera Skusea Theobald, Diceromyia Theobald, Geoskusea Edwards and Christophersiomyia Barraud*. By P. F. Mattingly. 8vo. London, 1959. [The Trustees of the British Museum.]
- Büchli, H. H. R. L'origine des castes et les potentialités ontogéniques des termites européens du genre *Reticulitermes* Holmgren. *Ann. Sci. nat. (Zool.)* (11) 20 : 263-429, 1958. [The Author.]
- Graham, H. M. Effects of temperature and humidity on the biology of *Therioaphis maculata* (Buckton). *Univ. Calif. Publ. Ent.* 16 : 47-80, 1959. [The Publishers.]
- Grégoire, C. Further observations on distribution of patterns of coagulation of the haemolymph in the neotropical insects. *Smithson. misc. Coll.* 139 (3) : 1-23, 1959. [The Publishers.]
- Harris, Moses. *An exposition of English insects*. 2nd ed., 1st issue. 4to. London, 1782. [Mr. J. F. Perkins.]
- Kevan, D. K. McE. A study of the genus *Chrotogonus* Audinet-Serville, 1839 (Orthoptera : Acridoidea : Pyrgomorphidae). Pt. V-VI. *Publ. cult. Cia. Diamant. Angola* 43 : 11-246, 1959. [The Publishers.]
- Klucze do oznaczania owadów Polski*. 8vo. Warszawa, 1954→
28. Fam. XXVII. *Lepidoptera*. 53b. *Noctuidae : Agrotinae, Melicleptriinae*. By A. S. Kostrowicki. 1959.
29. Fam. XXVII. *Lepidoptera*. 2-4. *Micropterygidae, Eriocranidae, Hepialidae*. By S. Toll. 1959.
- [Polish Entomological Society.]
- Pacific Insects*. Vol. 1, no. 1. *Organ of the program "Zoogeography and evolution of Pacific insects"*. 8vo. Honolulu : Bishop Museum, 1959. [The Publishers.]
- Stark, H. E. *The Siphonaptera of Utah*. 8vo. Atlanta : U.S. Dep. Health, 1958. [The Publishers.]
- Wolff, T. *The Natural History of Rennell Island, British Solomon Islands*. Vol. 2 (*Invertebrates, pars*) *Scientific results of the Danish Rennell expedition, 1951 and the British Museum (Natural History) expedition, 1953*. 8vo. Copenhagen : Danish Science Press, 1959. [The Trustees of the British Museum.]

In addition, separates have been presented by the West African Timber Borer Research Unit ; Professor C. M. Biezanko ; Dr. G. A. Walton ; Mr. D. Leston ; Mr. K. E. L. Simmons ; Mr. W. V. Harris ; Mr. D. Boocock ; Bee Research Department, Rothamsted Experimental Station ; Anti-Locust Research Centre ; Mr. B. Jobling ; East Malling Research Station ; Dr. J. L. Cloudsley-Thompson ; Mr. S. R. Loschiavo ; Dr. C. A. Edwards ; Entomology Department, Rothamsted Experimental Station ; Commonwealth Institute of Entomology ; Mr. G. Surtees ; Miss E. N. Marks and the Hope Department of Entomology, Oxford.